

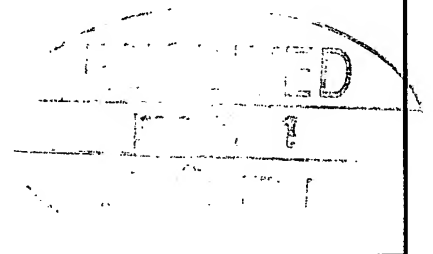
From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

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JAPON



Date of mailing (day/month/year) 04 May 2006 (04.05.2006)	
Applicant's or agent's file reference FP04-0145-00	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/008358	International filing date (day/month/year) 15 June 2004 (15.06.2004)
Applicant HAMAMATSU PHOTONICS K.K. et al	

## 1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

## 2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

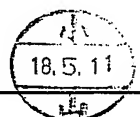
AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.+41 22 740 14 35	Authorized officer Masashi Honda Facsimile No.+41 22 338 70 10
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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference FP04-0145-00	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/JP2004/008358	International filing date ( <i>day/month/year</i> ) 15 June 2004 (15.06.2004)	Priority date ( <i>day/month/year</i> ) 17 June 2003 (17.06.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant HAMAMATSU PHOTONICS K.K.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 24 April 2006 (24.04.2006)
Facsimile No. +41 22 740 14 35	Authorized officer  <div style="text-align: center; font-weight: bold;">Masashi Honda</div>
Telephone No. +41 22 338 70 10	

# PATENT COOPERATION TREATY

TRANSLATION

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**FP04-0145-00**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2004/008358**

International filing date (day/month/year)

**15.06.2004**

Priority date (day/month/year)

**17.06.2003**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**HAMAMATSU PHOTONICS K.K.**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/008358

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/008358

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1, 2	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1, 2	NO
Industrial applicability (IA)	Claims	1, 2	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: WO. 03-003406, A1 (Hamamatsu Photonics Kabushiki Kaisha), 09 January, 2003 (09.01.03), full text, all drawings</p> <p>Document 2: JP. 2002-150928, A (Hamamatsu Photonics Kabushiki Kaisha), 24 May, 2002 (24.05.02), paragraphs [0055]-[0066], paragraphs [0095]-[0096], Figs. 6 and 11</p> <p><u>Claims 1 and 2</u></p> <p>The subject matters of claims 1 and 2 do not appear to involve an inventive step in view of documents 1 and 2.</p> <p>Document 1 describes an electron tube that interposes an aluminum sealing between a photoreception face plate and a Kovar cylinder constituting the side tube of a vacuum container, by airtightly sealing and thermally pressing them. It also describes a technique to use the photoreceptive face plate made of scintillator crystal replacing quartz, for detecting radiation.</p> <p>Document 2 also describes an electron tube that measures the ultraviolet ray, wherein the electron tube constitutes the photoreception face plate made of sapphire.</p> <p>As for the electron tube described in document 1, a person skilled in the art could have easily conceived of employing the photoreception face plate made of sapphire described in document 2, aiming to measure the ultraviolet ray.</p> <p>The thickness of sapphire plate of claim 2 merely is a matter of design choice appropriately set to be obtained by a person skilled in the art.</p>			

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/008358

Box No. VIII      Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The specification and drawings of the present application have not described sufficiently the technical content of the invention to be understood by a person skilled in the art.

According to the section of "the problems to be solved by the invention" of the specification, the metalizing process removes impurities on the surface of the sapphire plate, although the technical problem of photon defect occurrence on the sapphire plate by the impurities is described, however, the presence of the metalizing process is not specified in the claim.

The specific technique of the metalizing process, the content of the impurities, and mechanism of the impurity removal are not clear. The effect of the invention of the present application cannot be specified as to whether or not it is achieved by not performing the metalizing process, by employing aluminum sealing, by combining materials of sapphire plate and aluminum sealing, or by involving other conditions such as processing temperature.